

THE PSYCHO-SENSORIAL VALUE OF THE FOOD PRODUCTS – A PROVOCATIVE COMPONENT IN PURCHASE DECISION

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Abstract

The psycho-sensorial value is a specific, complex and determinant concept of the food products that is reflected by means of psycho-sensorial properties such as: shape, size, aspect, colour, taste, smell, fragrance, bouquet, density, clarity. The assessment of these properties by the consumers is decisive for the acceptance or the rejection of foods and classifies the products into savoury, or non-savoury, attractive, indifferent, or unattractive.

The psycho-sensorial features of food products allow us to make quick assessments of their qualities, but with a high degree of subjectivity among the common consumers and big individual variations, assessments that are highly influenced by the hedonic value of food products.

The sensory analysis of foods is part of the modern analytical methods: when correctly and scientifically applied, it allows a real assessment of the quality of these products, evaluation which could not be obtained only by assessing physicochemical and microbiological methods.

However, the scientific methods for sensorial assessment have a higher degree of objectivity and are used successfully in industry and trade, in evaluating the qualitative level of foods by authorised and qualified people.

Otherwise, the design of the psycho-sensorial value of food products involves tests and sensorial analyses and has as main objective the establishment of concordances among the consumers' demands and the level of the sensorial characteristics of the products.

The present paper aims at underlining the necessity to design the psycho-sensorial value of processed foods, as well as the importance of educating and informing the consumers for a better capacity to get oriented on the market, and implicitly, for a right purchase decision.

Keywords: food products, psycho-sensorial value, purchase decision, consumer, design

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Introduction

The modern concept of the nutritional value of products underlines the inseparable nature of its four components: the psycho-sensorial value, the energetic value, the biological value and the hygienic one, playing an important role in evaluating the quality of the food products when they reach the market.

The vital role of foods in human life is reflected by these specific aspects of the nutritive value. Besides filling the organism's demands for energy and active biological substances, food products also have to give psycho-sensorial satisfaction while they are consumed, to meet hygienic and innocuity requests that ensure the population's health. These demands are filled in a very close interdependence with the product's structure, chemical composition and features.

Modelling the psycho-sensorial value of food products represents, at present, the essential condition in order to obtain food that can be sold, a priority of the producers in the food industry and a basic request of consumers.

The evolution in the sciences involved in human nutrition has imposed the knowledge of the *main form by which the relation between human being and food manifests itself*, namely: giving nutritive material; the possibility to handle pathogen agents; the psycho-sensorial bond (affective).

The ways in which the human-food relation manifests itself have presented in the order they appeared along time, according to the historical criterion. However, if the interest in man's health had been taken into consideration, these would have had to be ranked as follows: salubrious, nutritive, and pleasant. Although innocuity and the nutritive value of a foods product are essential conditions for health and life, many people rank first the psycho-sensorial value of products, „the pleasure offered by the consumption of a food product”.

In order to understand this disagreement we have to the reasons that make the consumer give more importance to the psycho-sensorial properties of the food product than to the risk (imperceptible) of getting ill or its trofins. Knowing the mechanism of the affective relation, we can find solutions to correct some attitudes contrary to health and we can start people's education as regards food consumption behaviour, all these influencing the choice and consumption of food products.

1. Psycho-sensorial value – condition of food products' attractiveness

The psycho-sensorial value of food products, the sensorial and aesthetic values, respectively, is the one that invites one to buy a product, and gives its attractiveness. In fact, sensorial properties are, for the common buyer, the first criterion to evaluate quality, influencing the selection and acceptability of the food products, that, most of the times, are highly subjective.

In order to express the psycho-sensorial value there are methods which help to quantify and express it in a graphical manner, such as the score method, the profile method, that give us the possibility to compare products.

The general features that define the psycho-sensorial value of the food products are: *colour, smell, taste, fragrance, shape, aspect, size, texture, density, firmness, elasticity, freshness, tenderness* (by chewing), and *palatability features* (taste effects while chewing and after chewing). There are also features specific to groups of products such as clarity – for liquid products, the juiciness of the pulp, its turgor and freshness – for fruits and vegetables.

The psycho-sensorial value of food products is influenced by internal factors, specific to the products, such as the solubility of their chemical components, their melting point, and the product's temperature. For example the structure-textural density or firmness of fruits and vegetables is a dynamic property that represents the intensity of the connection between their structure and texture; it is related to their maturity, the intensity of the enzyme activity, the turgor degree.

In food products one can notice the change of the psycho-sensorial features in different stages of the product's manufacturing or life cycle, which makes it different according to manufacturing or life cycle stage the product is in.

For example, some products undergo important changes in their maturation stage:

- *meat* – its maturation is a process that influences and improves its psycho-sensorial value; meat gets a soft density, becoming more juicy and tender, with very pleasant taste and its colour changes from red to light red;
- *cheese products* – their maturation gives different assortments, under certain circumstances, the characteristic taste, smell and colour, the paste becoming softer, more oily, with pleasant taste and smell; during this stage cheese products undergo biochemical and physical changes. There are deep changes, when the taste, the smell are formed (due to the accumulation of the fragrance substances), as well as the density (that is rubbery, compact, elastic in the beginning and becomes more tender, oily); the drawing is also formed (fermentation stitches, according to the assortment) that gives us information when analysing the section of a slice of cheese;
- *fruits and vegetables* get their final psycho-sensorial characteristics, getting a harmonious psycho-sensorial value. Fruits and vegetables maturation represents a dynamic physiological and biochemical process, that turns into shape, size, weight, pigmentation, chemical composition, taste and smell;
- *wines* amplify their psycho-sensorial value during the ageing process, when the harmonization of the sensorial characteristics takes place, these becoming velvet-like, and the wine getting a better bouquet.

The consumers' reactions to the psycho-sensorial value of food products depend on:

- *perception* – the evaluation of the foods qualities and their choice is eased when the psycho-sensorial characteristics are appropriate;
- *motivation* – can influence the consumers' wish representing a motivation in the decision-making process;
- *feeling*- attractiveness leads to the acceptance of food products, the appropriate psycho-sensorial value of foods, making them pleasant and wanted; for example, when

choosing vegetal products, consumers take into account the correspondence between colour, the maturity degree and freshness;

- *experience* – consumers express their preferences according to their experience, they can establish which psycho-sensorial characteristics are normal, natural and indicate the foods properties based on other similar products;

- *thinking* – new food products can be accepted by consumers if the latter are explained the former's properties and if they can notice them personally.

2. Synergism – a principle based on which the psycho-sensorial value is modelled

If consumers' preferences can be modelled via large promotional campaigns and supported by authorised socio-economic structures, producers' attitude must take into account the new issues raised by the modern requirements in human nutrition, therefore to be based on a nutritive projection of the food products, focused on modern nutrition norms and requirements.

The nutritive value defines the correlation between the psycho-sensorial, energetic, biological and hygienic values, including them in a total that is the prerequisite of a food product's success on the market. The psycho-sensorial value, the first one to be perceived by the consumers, represents an important aspect of the total quality of food products that can weigh as much as 50% -60% from the general quality factor. The psycho-sensorial value of food products influences their selection from the available offer and the purchasing decision-making process. In many cases food products are selected by the consumers exclusively based on the satisfaction they offer, leaving aside the energetic, biological and hygienic value.

Nutritional modelling of food products is possible only if we use the most appropriate models to determine and express the nutritional values of food products that allow their correct evaluation. This methodology must answer the issues raised by the design both of the psycho-sensorial and hygienic value of processed food and the biological and energetic values.

The more intense market segmentation, therefore of food consumption as well, makes it necessary for the producer to know the distinct and relatively complex needs of the most various segments of consumers, and, in order to fill these needs it is necessary to make products that are appropriate from a qualitative point of view, which involves, in the case of food products, underlining their psycho-sensorial value as well. Thus, it became necessary to find out some ways to determine and express the psycho-sensorial value that can easily be applied and can lead to a correct and useful interpretation of results.

The psycho-sensorial value of food products can be assessed by means of sensorial examination and via methods that are specific to sensorial analysis. Although it has a special significance, having a high degree of subjectivity, there are many methods to quantify the psycho-sensorial value, all these methods pursuing to increase the degree of objectivity.

The most important categories of tests used to evaluate the acceptability for consumption of food products are: assessment, comparison and selection.

The *assessment* of food products is the sensory examination of food which allows for the discovery of various shades of their sensory characteristics by using a scale of values (quotation). Fitting the food products into quality classes is done more accurately, as this method of evaluation not only establishes differences but also measures them.

The *comparison* is the sensory examination carried out on foodstuff starting from an item defined as basic or standard. In relation to it, analysts set the particular sensory attributes of the other products analyzed. Thus, by relation to the base sample, table ranks of food can be made.

The *selection* is the sensory examination which results in the elimination or choice, rejection or preference.

The multiple forms of sensory examination of food led to their classification into two main groups:

- *analytical testing* - based on objective conditioned sensory perceptions, the subjective assessment of the taster being negligible;
- *sensory quality control* - relies more on purely psychological involuntary perceptions and tends to assess the degree of subjective desire and the consumer quality of the examined product; in other words, the control of the consumer value and the degree to which the product will be accepted by consumers.

Table no. 1 contains a systematization of the main methods of sensory analysis.

Table no. 1: The systematization of main methods of sensory analysis

No.	Tests/control methods	Assessment method	Choice of experts	No. of experts	Main domains where it can be applied
1.	Twin test	Physiological	Intensive special training	3-10	Basic research; diversifying assortment (variation for the raw materials); assessment of the ways of processing and the influence of the packaging; expert education
2.	Duo-trio test				
3.	Triangle test				
4.	Dilution method				
5.	Profile method	Physiological and psychological	Professional education; obtaining the sensory minimum; periodical checks	3-10	Basic research: warehouse experiences; quality assessment
6.	Comparison method			3-10	Comparing to samples; quality assessment; international contests
7.	Rank sorting		Needed for		

	method		the groups of control experts	1-10	Quality contests; a condition for quality control; international contests
8.	Point assessment method		Coordination	1-10	Quality assessment; quality control within the company; national and international contests

Source: after Diaconescu and Păunescu, 2003

While assessing the psycho-sensorial value of the food products, one can face aspects related to: man's sensorial abilities, the psycho-sensorial properties of food products, the dimensions and the influence of the social environment (education, tradition, circumstance, fashion etc.).

The design of the psycho-sensorial value of processed food products must be done with extreme care and should start from the study of the correlation with the other aspects of the nutritional value, especially with the hygienic value. The design of the psycho-sensorial value should observe several stages:

- the first stage – identifying the needs and demands of the real and prospective consumers, that are in permanent change, influenced by many environmental factors (fashion, tradition, culture, information, education etc.);
- the second stage is represented by the product design itself and the establishment of the psycho-sensorial potential of the food product;
- during the third stage we decide upon the production recipe according to the pre-established psycho-sensorial potential;
- during the fourth stage we select the ingredients of the recipe: raw materials, technological auxiliaries and additives, based on the qualitative assessment as regards chemical composition, as well as the technological and psycho-sensorial qualities;
- after we obtain the final product, it is highly important to choose the sensorial analysis method, according to what goal there is. Sensorial analysis has the advantage that it reflects the consumer's reaction to the respective food product.

Foods psycho-sensorial value design and modelling is one main direction of research in food industry that leads to an unprecedented expansion of the food products' range. There are many ways to intervene in modelling it, as any psycho-sensorial characteristic may undergo changes – colour, taste, smell, density – but we can also act upon many characteristics, thus getting many possible combinations. We can give only a few edifying examples in this respect:

- *taste* can be changed by different additives, natural or artificial; fruits, vegetables, sugar, chocolate, leading to the appearance of improved products (cheese cream with pepper, herbs, garlic, onion, fruit yogurt, musli yogurt, margarine tasting like cheese, ham, peaches, strawberries) or real new ones (rice with milk and fruit salad, rice with milk and chocolate);

- *smell* can be changed by adding natural or artificial fragrances (vanilla, peppermint, cinnamon, etc);
- *density* can be changed according to how the product is going to be used (yogurt to drink);
- *colour* can be changed by adding natural or synthetic dyes.

The psycho-sensorial value, very variable, can be designed and modelled experimentally, it can be improved taking into account the consumers' preferences, but also taking into account the effects generated by the use of amendatory substances on the quality of the product. The introduction of different additives (natural or artificial) in classical food products changes their psycho-sensorial properties (aspect, colour, taste, smell, etc). The change can envisage one component of the psycho-sensorial value, but it can also take place in two, three or all the components, and thus the wide variety of variants that can be obtained. The easy ways to model the psycho-sensorial value widely explain the assortment boom of the food products offer.

Many basic sensorial characteristics – as variables in modelling- can be combined to give the consumer a holistic perception, resorting to synaesthesia that is the stimulation of a sense by another one. In order to get a harmonious result we have to take into account synergism as a principle in modelling the psycho-sensorial value of food products, as the action of substances can be intensified by their association.

A harmonious psycho-sensorial value, designed and modelled according to rational principles allows us to obtain products that meet consumers' needs and satisfy their demands, which will lead to their market success in competition with other products.

3. Nutritional education and information of the consumers

Preoccupations to improve the nutritional state of the population have a core position within the programmes of health protection at national level, as well as at regional and international level.

Nutritional education must be thought as an interference aiming to change social communication in nutrition in order to improve the nutritional state in some segments of population. The interferences, in order to be put into practice, claim the observance of the action principles based on the following core ideas:

- Equity : allowing a better social justice;
- Participation: association of population groups in the decision-making processes;
- Integrity: communication must be a support activity in the processes of development, orientation to improve eating habits;
- Rationality: interferences must rely on a deep analysis of nutritional problems.

Knowing the psycho-sensorial value is decisive criterion in assessing food products' quality as well as a starting point that permits a better correlation of the offer with demand for goods, thus ensuring their market success.

The *product demand* structure can be changed by better informing the consumers and by a nutritional education of the population.

The diversification of the media by means of which information is spread contributes very much to this process. The main informative sources about nutrition are television, radio, magazines, newspapers and best sellers, together with the advertisements associated with them. All these are important means of nutritional education. Knowledge about a good nutrition can be found in educational and informative texts, thus being internalised more easily. However, the messages have to take into account the population's preoccupations, as a good presentation of the possible choices and an exemplification of the lifestyle are vital to ensure a satisfactory nutritional education.

Publicity campaigns and promotional activities significantly influence the demand for food products. Mass media – radio, television, and written media – have not been used in educational nutrition for a long time, despite the important influence that they can have on consumer behaviour. Publicity is a good way to make a simple message known. Moreover, the messages distributed by mass media permit a better knowledge of the nutritional principles, contributing to the exchange of experience among different communities and influencing the actions of the ones in charge. Mass media can also play another important role, if they can benefit from total freedom of information: it can contribute to triggering pressure on public power, making it act if necessary.

Over the last years the evolution of advertisements for food products has been spectacular, influencing the wide mass of consumers in making the purchasing decision for some food products. But very close attention is required, as, due to their huge impact on population, there were quite a few cases when their qualitative features were exaggerated or there were even exaggerated or unfounded features of the products that appeared in advertisements. In order to get rid of these kinds of advertisement there is an appropriate legislation and institutions that fight to defend the consumers' rights and try to protect them.

Therefore, we should not neglect the fact that, at present, advertisements for food products do not have an educational value, they being based mainly on exacerbating the psycho-sensorial value and on selling the product. That is why only by giving population complete and precise information can we help them choose food products correctly, and the educational system and the health one must contribute in this respect.

The use of social marketing for a better nutritional education brought important contributions to promoting and improving communication in nutrition by introducing some marketing rules such as: a thorough study of the consumer; market segmenting; creativity; multimedia strategy.

By applying the general rules in marketing it was possible to establish the main stages in drawing up the programmes for nutritional education: market segmentation with defining of the categories of consumers and selecting the channels of communication. It is well known that the best results are obtained when the multimedia channels are associated (radio, television, written media, posters).

When it comes to interpersonal communication there is the advantage of privacy, of responsible people getting involved in it, but there is also the disadvantage that the agents have not the capacity to be open and non-conservative when they promote new ideas.

Mass-media communication brings new ideas and information to a large audience, it communicates favourable attitudes.

Interpersonal education can have decisive effects, encouraging the total change of the consumption behaviour and the eating habits.

Conclusions

In a market that is plentiful in products with a very diversified assortment structure, the purchasing decision becomes difficult, being influenced by the qualitative differences among products, by their package and promotion, by the financial possibilities and the prices.

Nutritional education brings contributions to improvement of the social communication in nutrition; therefore it is necessary to develop an efficient multimedia strategy, because a most important part of the population is open to the audio-visual messages, against to those of the specialists working in health.

The requirements as regards food products are different according to categories of consumers, complex and with a high subjective connotation, without taking into account the objective criteria. Between the food product and the consumer there grows a system of informational connections by means of the sense perception organs man has and that, according to the individual's personality leads to their behaviour.

Setting the quality value can be done by means of the correspondence between the products' properties, on one hand, and the psychological reflection of the available informational consumers have, on the other. We can, thus, state that man's sensitivity is basic to find out the psycho-sensorial value of food products, modelled by the informative-educational system and materialised in behaviour schemes.

Man's capacity to get satisfaction as a result of food consumption represents a condition for a normal life and correct nutrition. In fact, we can state that, as human society evolved the psycho-physiological sensations offered by the consumption of a product have represented the decisive criterion to accept the food product as part of the diet. Food products that create pleasant sensations were kept for consumption, as, by just a simple memory, their qualities produced appetite – as a result of the conditioned reflexes. On the other hand, those that create unpleasant sensations or produced digestive trouble were rejected, becoming repulsive. Food products' selection was made, therefore, taking into account sensorial criteria that determine the consumers' attitude towards food products. Even nowadays they have an important weigh in choosing products, even if it is known that food products' assessment must be carried out by studying the nutritional value as a whole, therefore all four values.

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